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FISH COLLECTED IN THE VICINITY OF VINTON,
IOWA

DAVID T. JONES

It is hoped that this article may be but a start toward supplying definite records on what fish exist today in our Iowa streams. Our old records for the state are good, but we need recent records on which to base our ecological studies and to establish a sound program of conservation. Some neighboring states have been very active in ichthyological surveys, which have to a great extent made such work here seem less urgent. Neither the excellency of work done thirty-five or forty years ago nor the completeness of work done recently near our borders affords us an excuse for neglecting this field. While waiting for a biological survey of the entire state to materialize small surveys from restricted regions may help pave the way for more extended studies.

The present study is a result of five seining trips to localities within three miles of Vinton, Iowa, in the basin of Red Cedar river, Benton county. The trips were as follows:

DATE	LOCALITIES VISITED	WEATHER
June 28, 1926	Mud creek	Sunny
August 11, 1926	Prairie creek Red Cedar river at mouth of Prairie creek Dudgeon creek	Cloudy
August 13, 1926	Hinkle creek	Sunny
August 16, 1926	Goarcke's lake	Sunny
August 16, 1926	Mud creek Prairie creek Dudgeon creek	Sunny

A fifteen foot minnow net was used. Pratt's Manual of Vertebrates was used in classification with Forbes and Richardson's Illinois III for a check. Twenty-four species were collected. New species were secured at every trip. In order to allow plenty of time for a careful classification in the limited time at my disposal further collections were not made, hence the list herein given is incomplete for this locality.

The author is under obligation to W. E. Albert, state game warden, for a scientific permit to secure specimens needed, also to the following for help with seining: John Scott Jr., Hollis Wilson,

Donald Bordwell, Everett Tilson, Hamilton Tilson, Ronald Lee-mon, William Franklin and Glenn Bordwell.

The following localities were seined:

Mud' creek, one-half mile east of Vinton, seined from its mouth one mile upstream to the road which separates sections 22 and 27 of T. 85 N., R. X W. of 5th P.M., civil twp. of Taylor. This is a swift stream with mud banks and mud or sand bottom. Both woodland and prairie conditions were encountered.

Prairie creek from its mouth to a point one-half mile upstream where the creek first forks — typically a mud bottom and a woody region. This region is in the southern part of section 10 and the northwest corner of section 15 of T. 85 N., R. X. W. of 5th P.M., civil twp. of Taylor. Note that this is a different Prairie creek from that in which Prof. Meek seined, which is in southern Benton county. (See Potter and Jones article in the bibliography.) Some seining was done in Red Cedar river near the mouth of Prairie creek.

Dudgeon creek, a small sandy creek, unlabeled on most maps. It flows through bottomland of the river and connects several large bayous. Its course changes from year to year. It was followed from its mouth (which this year is one-eighth mile upstream from the mouth of Prairie creek) to the bridges on the paved road, "the grade." Woodland conditions prevailed. All this locality is in the southeast corner of section 9, T. 85 N., R. X. W. of 5th P.M., civil twp. of Taylor.

Hinkle creek, which flows through west Vinton, was seined for one-fourth mile in the eastern part of section 24, T. 85 N., R. XI W. of 5th P.M., civil twp. of Jackson. Here the bottom was sand and gravel or mud. Prairie conditions predominated.

Goarcke's Lake, usually unlabeled on maps. It lies immediately east of the city of Vinton in that portion of section 15 lying south of the river in T. 85 N. R. X W. of 5th P.M., civil twp. of Taylor. It is overflowed by both Red Cedar river and Mud creek. It has a shallow mud bottom, although the west shore is rocky. From a bluff on the west bank which is lightly timbered I have seen after a downpour a bushel or more of land snails washed down to the water's edge.

LIST OF FISH COLLECTED

1. *Carpiodes difformis* Cope. Blunt-nosed river carp. Found in holes along the creeks, usually on mud bottom. Taken from Mud creek and Prairie creek.
2. *Carpiodes velifer* (Rafinesque). Quillback. Both large and small ones seined from a muddy hole at the mouth of Prairie creek in about four and one-half feet of water. Not taken elsewhere.
3. *Catostomus commersoni* (Lacépède). Sucker. Young are common in the deeper places in the main current of creeks. One 25.5 cm. long was taken from a hole in the main stream of Mud creek in about three and one-half feet of water, on sand and mud bottom. The crowding of the scales anteriorly and their decrease in size in the anterior portion of the lateral line, together with the structure of the mouth, are good field characters. Also taken from Prairie creek and Hinkle creek.

4. *Cyprinus carpio* Linnaeus. European carp. An introduced species, reported to be very abundant. Only one specimen, 21.7 cm. long was taken, and that was in Goarcke's lake in quiet, muddy water one and one-half feet deep and on mud bottom. This was the warm end of the lake as it was near noon and the sun was shining. Carp flounder about considerably when they feel the net closing in on them.

5. *Campostoma anomalum* (Rafinesque). Stone roller. Abundant in Hinkle creek under prairie environment where bottom is sandy or pebbly. The black-blotched sides and elongate shape make this species noticeable in the field. Unlike other genera *Campostoma* has the intestine wound around the air-bladder. The peritoneum is black and the long, dark, and much-coiled intestine literally packs the body cavity. In the midst of this visceral mass is the two-chambered air-bladder which occupies a position almost central in the body cavity. A few were also taken from Prairie creek.

6. *Pimephales promelas* Rafinesque. Fathead. Only one specimen taken. Depth in length three to four while in the following species it is four to five. The black bar on the lower portion of the dorsal fin is prominent, terminating in a black spot anteriorly. Dorsal scales are pigmented heavily along posterior margin. Base of caudal fin dusky. Taken from a muddy-bottomed cut-off of Mud creek in three and one-half feet of water along with several channel cat, suckers, bull-head minnows and chubs.

7. *Pimephales notatus* (Rafinesque). Blunt-nosed minnow. A more slender species than the preceding. Taken often. Common in Dudgeon and Prairie creeks; also taken in Hinkle creek. Easily confused in the field with *Cliola vigilax*. These two species and the preceding can be easily separated by the club-shaped first ray of the dorsal. *Pimephales promelas* can be eliminated by its relative depth being greater (depth in length numerically less). In separating *P. notatus* from *C. vigilax* the following external features have been found useful. The dorsal scales of *P. notatus* stand out more prominently because of their dark posterior edges. The scales of *C. vigilax* are more evenly pigmented. The dark spot on the anterior portion of the dorsal fin is more prominent in *C. vigilax* up on the anterior membranes and rays, while in *P. notatus* it is almost obsolete except at the very base of the central part of the dorsal fin. Both species have a prominent black spot at the base of the caudal fin and a lateral stripe, usually more pronounced posteriorly. In preserved specimens the long, closely-packed, dark-colored intestine and black peritoneum of *P. notatus* show through the body wall, while the short digestive tract and silver peritoneum of *C. vigilax* usually do not discolor the specimen.

8. *Semotilus atromaculatus* (Mitchill). Chub, Horned dace. Considerable variation was found. The black blotch at base of dorsal differs in size and is in some cases all but lacking. The caudal spot and lateral streak differ likewise. The small barbel at the upper side of the maxillary is rudimentary, to say the most. Where color markings are not noticeable and barbels absent, this form classifies as *Leuciscus elongatus* (Kirtland). Since I have no adequate check on the latter species, and since I have found intermediate stages, I am listing all as *Semotilus atromaculatus*, which I know occurs here. The situation would make a fine study of variation. Abundant in Mud creek and Hinkle creek. Small ones were taken from Prairie creek.

9. *Abramis crysoleucas* (Mitchill). Golden shiner. The deeply decurved lateral line as well as color and shape help to distinguish this fish in the field. It is fairly common where found. The largest one taken was 9.85 cm. long. Taken in Mud creek and Prairie creek.

10. *Cliola vigilax* (Baird and Girard). Bullhead minnow. Very numerous in parts of Mud creek. A minnow that seems to be very adaptable and successful. The females of this species differ in coloration and shape of the first ray of the dorsal fin from the males. Also taken from Goarcke's lake and Prairie creek.

11. *Notropis cayuga* Meek. Cayuga minnow. Only one specimen in our collections, from Mud creek.

12. *Notropis blennioides* (Girard). Straw colored minnow. Abundant in

Prairie creek and Hinkle creek. A fish so common in appearance that it has no good distinguishing field characteristics.

13. *Notropis cornutus* (Mitchill). Shiner. One of our larger minnows, distinguished in the field by the very deep exposed parts of scales in the lateral line region. Taken in clear swift water in Hinkle creek and Mud creek and in muddy quiet waters in Goarcke's lake and Prairie creek.

14. *Notropis jejunus* (Forbes). Taken only once, in Mud creek.

15. *Phenacobius mirabilis* (Girard). Sucker mouthed minnow. Taken in Hinkle creek.

16. *Ictalurus punctatus* (Rafinesque). Channel cat. Eight young channel cat were taken with one drag in a cut-off part of Mud creek. Two were taken at a different time in the main stream.

17. *Ameiurus melas* (Rafinesque). Black bullhead: Common on muddy bottoms and in sluggish water, but occasionally occurring in clear currents. Found in Mud creek, Hinkle creek and Goarcke's lake.

18. *Fundulus notatus* (Rafinesque). Top minnow. One specimen only, taken from some distance up Prairie creek, where there were mud banks, sandy bottom and clear running water. This specimen had anal fin more spotted, lateral stripe more jagged and color through eye more dim than pictured in Illinois III, opposite page 143, by Forbes and Richardson. Length 50 mm.

19. *Pomoxis annularis* Rafinesque. Crappie. Young are of common occurrence in lower parts of Prairie and Dudgeon creeks.

20. *Lepomis cyanellus* Rafinesque. Green sunfish. Our commonest sunfish. The only fish taken from all localities visited. Prefers shallow water. The projecting lower jaw, the shortness of spiny rays of dorsal fin, and the fact that the opercular flap is not as free as in other sunfish are good field marks.

21. *Lepomis humilis* (Girard). Orange-spotted sunfish. Very abundant and brightly colored in Goarcke's lake, where there are mud and rock and mud bottoms. Too small to be used, but one of our most brilliant and beautiful fish. Because of the brilliancy and delicacy of its color pattern it is locally known as Japanese sunfish. Taken also in Mud and Prairie creeks.

22. *Lepomis pallidus* (Mitchill). Bluegill. Quite common. Along with European carp and black bullhead it forms the bulk of the fisherman's ordinary catch. Taken from Prairie creek, Dudgeon creek and Goarcke's lake.

23. *Micropterus salmoides* (Lacépède). Large-mouthed black bass. One minnow only of this kind taken from Prairie creek near its mouth. Length 4.75 cm.

24. *Boleosoma nigrum* (Rafinesque). Johnny darter. More specimens of this transparent spotted little fish were taken from Mud creek than elsewhere. It was found generally on sandy or pebbly bottom and in swift current. Also taken from Prairie and Hinkle creeks.

In a small collection, as this one is, general conclusions should not be drawn as to preference for different habitats. Since many fish travel in schools the author may have been misled as to the relative abundance of some species. Other swift species may have eluded the net. Weather conditions, seasonal and physiological changes probably have much to do with the activity of fish, hence fish taken one month might apparently be absent a month later. Change in feeding habits when seasonal changes diminish or increase food supply may be a factor. Changes in the light have much to do with the appearance of sunfish, and possibly of other species. The need at present is not the forming of general conclusions concerning Iowa fish, but rather a collection of data concerning them.

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